

Data direct, via TETRA

South African developer E-S-S, a specialist in machine communication and Scada via TETRA systems, showed an enhanced radio remote terminal unit (RTU) which incorporates an embedded computer for added power and flexibility. "We are also running a Linux operating system inside the RTU and this gives us now facilities in doing very interesting things with data", said Johan Hoolsema, demonstrating the device on the Sepura stand.



TETRA-enabled RTU, by E-S-S: LED displays visible on the front of the device enable the technician to assess operating conditions at a glance, including radio signal strength

Using a nearby home weather station device as his source of data, he showed how decentralized computing power can boost the efficiency of transmission across the radio network. "That weather station has got, like, 60 registers, and the traditional way is to send all these registers to the master unit", he explained. "But maybe a client does not need all 60 registers: for instance, on the weather station I might need temperature, humidity, maybe windspeed. On this presentation, we've just done about 12 readings. So now we are stripping out 48 values which are not needed."

If the embedded computer in the RTU is instructed to send only the values of interest, the data can be packaged into a single SDS message – and the RTU need send it only when a value has changed. "We've got control of what happens over the air", Mr



The intelligent bus slave can send critical data direct to TETRA mobiles for immediate action



Johan Hoolsema (at left) demonstrates radiotelemetry via TETRA SDS

Hoolsema emphasized. "We take all the overheads out and we contain the necessary data and then we transmit it over the air as a very small contained message. So it's reducing your bandwidth requirement tremendously.

"And that's a very, very nice feature. A network operator looks for a perfect way to utilize the bandwidth, because if you require a lot of data you need more infrastructure – and more infrastructure is more cost, eventually, to the user."

Bypassing Scada

Another innovation, claimed by Mr Hoolsema as a world first, is the ability to transmit data direct from the Modbus bus slave device on the weather station to a Sepura handheld radio. "Here you can see the inside temperature, the air pressure, the humidity, outside temperature, and that's coming straight from the device", he said. "It's still sending it, obviously, to the Modbus master, but the unit is also sending it straight to the handheld. This could be very well used, let's say, in the oil and gas industry – if you have got, like, a gas leak, maybe. The sensor is picking up the gas leak suddenly. That gas leak can be transmitted as group data to every user on the plant, without even going through your Scada system."

■ Information:
www.e-s-s.co.za

This weather station on the Sepura stand supplied data for E-S-S's telemetry demonstration, through a Modbus slave device

